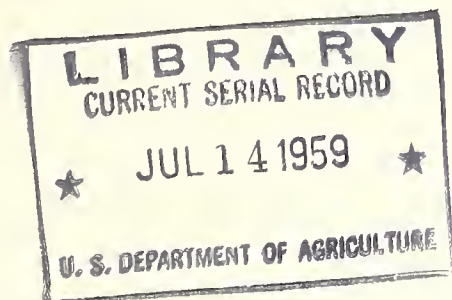


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# **COST OF MARKETING EGGS**

## **AND LABOR OUTPUT OF**

## **SELECTED COOPERATIVES**

### *Part I - Northeast*

**BY HARRY E. RATCLIFFE**

**GENERAL REPORT 59  
MAY 1959**

**FARMER COOPERATIVE SERVICE  
U. S. DEPARTMENT OF AGRICULTURE**

FARMER COOPERATIVE SERVICE  
U. S. DEPARTMENT OF AGRICULTURE  
WASHINGTON 25, D. C.

Joseph G. Knapp, Administrator

\* \* \* \* \*

The Farmer Cooperative Service conducts research studies and service activities of assistance to farmers in connection with cooperatives engaged in marketing farm products, purchasing farm supplies, and supplying business services. The work of the Service relates to problems of management, organization, policies, merchandising, product quality, costs, efficiency, financing, and membership.

The Service publishes the results of such studies, confers and advises with officials of farmer cooperatives; and works with educational agencies, cooperatives, and others in the dissemination of information relating to cooperative principles and practices.

\* \* \* \* \*

This study was conducted under authority of the Agricultural Marketing Act of 1946 (RMA, Title II).

## CONTENTS

	Page
Summary .....	iv
Background of study.....	1
Scope and purpose .....	1
Organizations selected .....	2
Period covered .....	3
Operations included .....	3
Data collected.....	5
Direct costs and labor requirements.....	5
Indirect or overhead costs .....	6
Indirect labor costs .....	6
Other indirect costs.....	6
Other information.....	7
Cost and output comparisons .....	7
Total costs.....	7
Direct costs and labor output.....	8
Labor and truck costs and output by plant operations .....	8
Collecting .....	10
Receiving.....	11
Inspecting .....	11
Sizing.....	12
Candling .....	13
Cartoning.....	15
Packing cartoned eggs.....	15
Coopering cases.....	16
Stacking.....	16
Loading out .....	16
Delivering.....	18
Packing materials .....	19
Loose pack.....	19
Cartoned pack.....	20
Other direct costs .....	20
Total direct costs.....	20
Indirect costs .....	20
Plant and non-plant.....	21
Costs by type of pack .....	22

## Summary

This report is part of a renewed and expanded area study similar to one made in 1950-51. The original study had the following major objectives: (1) to obtain information on costs and labor requirements of the several operations in egg handling, (2) to determine and measure the factors affecting costs, and (3) to check, measure and interpret the findings by applying them to actual operating conditions.

This report covers the first of these objectives for eight farmer cooperatives in the Northeastern States and Ohio. It essentially presents comparative statistics of (1) total costs, (2) direct unit costs of 12 individual operations by associations, (3) indirect (overhead) costs by associations, (4) costs by type of packs, and (5) output per man-hour of labor by individual operations for eight cooperatives in the northeastern States and Ohio.

The annual volume of eggs handled by the individual associations ranged from 73,000 to 555,000 cases, averaged 259,522 cases, and totalled 2.1 million cases.

Labor costs, direct and indirect, constituted 42 percent of the total cost. Materials were next with 36 percent. Truck costs were 12 percent of the total. Other costs made up the remaining 10 percent.

The analysis reveals wide variations in direct costs per unit and output per man-hour for most of the 12 operations among the 8 associations studied. No association had uniformly low or high labor costs or outputs in all operations. These 12 operations were collecting, receiving, inspecting, sizing, candling, cartoning, packing, coopering cases, stacking, loading out, delivering and egg breaking.

Direct labor costs for collecting eggs averaged 19.9 cents and ranged from 13.5 to 27.3 cents a case. Output per man-hour averaged 9.9 cases and ranged from 5.7 to 14 cases. Truck costs ranged from 9.7 to 24.8 cents a case and averaged 15.6 cents.

Direct labor cost for receiving eggs into plants averaged 2.1 cents and ranged from 1.3 to 2.7 cents a case--labor output ranged from 56.2 to 150.7 cases per man-hour and averaged nearly 94 cases.

Four associations inspected eggs. The labor cost averaged 7.6 cents per case and ranged from 3.2 to 10.5 cents. Output averaged 32.5 cases per man-hour and ranged from 14.8 to 60.1 cases.

The labor cost of sizing eggs by four associations averaged 14.8 cents and varied from 7.2 to 30.4 cents a case, while labor output averaged 13.4 cases and ranged from 3.9 to 21.7 cases per man-hour.

For candling eggs the direct labor cost averaged 52 cents a case for eight associations and ranged from 36 to 75 cents. Labor output averaged nearly three cases per man-hour and varied from 2.4 to 3.8 cases.

The average labor cost of packing cartoned eggs was 9.8 cents a case for 8 associations and ranged from 4.5 to 13.9 cents. Output averaged nearly 17 cases per man-hour. The range was 11 to 26 cases.

The average labor cost of coopering cases for eight associations was only 2.5 cents a case, with a range from 1.6 to 3.2 cents. Labor output averaged 67 cases per man-hour and ranged from 31 to 141 cases.

Stacking eggs in the holding room cost an average of 2 cents a case and varied from 1.4 to 3.4 cents, while

labor output averaged 94 cases per man-hour and ranged from 54 to 163 cases.

The labor cost of loading out eggs averaged 2 cents a case, with a range from 1 to 4.1 cents. Labor output averaged 105 cases per man-hour with a range from 58 to 196 cases.

Direct labor cost for delivering eggs to buyers ranged from 4.8 to 22.9 cents a case for six associations delivering eggs in their own trucks. The average cost was nearly 12 cents. Truck expense averaged nearly 9 cents a case and ranged from 3.7 to 14.6 cents. Labor output ranged from 12 to 30 cases per man-hour and averaged 21 cases.

The direct labor cost of egg breaking was 87.3 cents a case for one association.

The cost of packing materials for the loose pack averaged 40 cents a case and ranged from 7.2 to 57.7 cents. Materials for the cartoned pack averaged 96.5 cents a case and ranged from 81.5 cents to \$1.10.

The total of all costs, direct and indirect, of handling eggs averaged 5.4 cents a dozen for wholesale-graded eggs packed in cases at four

associations; 6.9 cents a dozen for consumer-graded eggs packed in cases at eight associations; and 9.1 cents a dozen for consumer-graded eggs cartoned at eight associations.

Findings of this study point up the wide variations in labor costs among associations--as much as 39 cents a case or more than 100 percent in the high cost operation of candling eggs. In the low cost operation of loading out, one association's cost was four times that of another. One important factor in candling labor output and per unit cost was the type of egg handling equipment used. These and other findings suggest the possibilities of reductions in costs.

Although this report does not analyze factors affecting costs, the unit costs presented can be used by the cooperating organizations and other egg-handling plants to compare with their own costs. Plants with costs out of line are then in a position to take steps to find out why their costs are comparatively high and then if possible make the necessary corrections to reduce them. However, plants not included in this study will need to make sure that the method of arriving at their costs is comparable with that of this study; otherwise, the comparisons will not be valid.



# **Costs of Marketing Eggs and Labor Output of Selected Cooperatives, Part I, Northeast**

**by Harry E. Ratcliffe**

**Poultry Branch**

**Marketing Division**

The cost of marketing eggs is of interest and importance to producers, the management of egg-handling plants, and consumers. Low handling costs by cooperatives usually mean higher returns to producers or lower costs to consumers or both.

Comparison of costs with those of other organizations enables manage-

ment of one association to determine whether its costs are high or low. If they are high, steps may be taken to determine the cause and then to make changes and improvements in operations, plant layout, or other factors.

This report contains information to make such comparisons possible.

## **BACKGROUND OF STUDY**

The study is a renewal of a similar study made in 1950-51 and covers a wider area. That study had three major objectives: (1) To obtain information and data on costs and labor requirements of the several operations or steps in handling eggs for the determination of average, ranges, and yardsticks, (2) to determine and to measure the factors affecting costs and other measures of relative efficiency, and (3) to find and apply methods, skills, techniques, and other means of increasing efficiency in individual operations and organizations.

The benefits of cost reductions could eventually affect all egg-handling agencies whether cooperatives or not. The previous study included 9 associations in 5 Northeastern States and 16 associations in 7 North Central States. The overall study has been expanded to include five associations in the far west as well as eight associations in the Northeastern and nine in the North Central States.

Note: Appreciation is expressed to the managers and employees of the associations studied for their cooperation and assistance; to Henry W. Bradford and Edwin E. Drewniak of the Poultry Branch, Farmer Cooperative Service for assistance with the field work and compilation of data; and John J. Scanlan, Chief, Poultry Branch, who made a substantial contribution in planning and conducting the study.

## **Scope and Purpose**

This is a report of the data obtained from eight associations in the Northeastern States and Ohio during 1956-57. It covers the first objective of the original report and includes: (1) Total costs, (2) direct costs of handling eggs by specific operations, (3) total indirect costs, (4) labor output per man-hour, and (5) costs by type of pack.

It is primarily a comparative statistical summary consisting of 25 cost and labor output tables covering the phases mentioned above. It compares direct costs and labor output by associations and individual operations, indirect costs by associations but not by individual operations, and costs by type of pack by associations.

The purpose of this report is to make available as quickly as possible information for use of cooperatives and others, particularly in the north-

eastern area, in comparing costs and labor efficiency.

Similar regional reports on the two other areas will be prepared as soon as the information obtained is tabulated and a final analytical report will then be prepared covering the three areas combined.

## Organizations Selected

Associations included in the study were selected because they were: (1) doing an effective job of marketing eggs; (2) either candling, cartonning, or inspecting a large portion of eggs received; (3) handling relatively large volumes compared to other associations in their areas, and (4) using newer types of equipment.

Three associations were selected in Ohio and one each in Connecticut, New Jersey, New York, Pennsylvania, and Virginia.

One association handles chiefly farm supplies. The other seven are specialized egg and poultry cooperatives. Two of these handle both eggs and poultry, four handle eggs only, and one handles eggs plus some farm supplies.

Each association has been given a code letter in this report since the information and data were obtained on a confidential basis with the understanding that the names or addresses of the cooperating associations not to be divulged.

The 8 cooperatives received a total of 2,076,175 cases of eggs, or an



With newest make of equipment, after eggs are hand candled they are mechanically sized, shell processed, and placed in cartons or filler-flats ready for packing.

average of 259,522 cases per association, during the year ending with the 2-week period of the study. The smallest in volume handled slightly more than 73,000 cases and the highest 2 more than 555,000 cases each.

## Period Covered

An intensive study of the operations of each association was made over a period of 2 consecutive weeks. Because of limitations of time and personnel, it was not possible to visit all associations during comparable periods in their seasonal volume cycle. Consequently the volume handled by the associations during the period visited was below the average for the year for some associations and above for other associations.

Table 1 shows the relationship of the volume received by each association during the period studied to the average for the previous 52 weeks. The receipts of three associations, A, D, and F, were above the yearly average and those of all the others, B, C, E, G, and H, were below the average. The average of the eight associations' receipts during the period visited was 104 percent of the period average for

TABLE 1.--Relationship of egg receipts during 2-week period to the average 2-week receipts for the year, eight associations, 1956-57<sup>1</sup>

Association	Receipts of period in relation to average for year	Association	Receipts of period in relation to average for year
	Percent		Percent
A	103	G	98
B	83	H	90
C	85	Average	104
D	112	Range:	
E	89	Low	83
F	168	High	168

<sup>1</sup> The year covered the 52 weeks ending with the last day of the period of study.

the year. Unit costs of an association with its period volume below average were usually higher than normal and one with volume above average usually had lower unit costs during the period of visitation.

## Operations Included

A comparison of total operating costs was inadequate because all firms did not perform the same services or perform them in the same proportion. Therefore, it was necessary to break down costs and labor output by individual steps, operations, or services through the handling or marketing process so they could be made as nearly comparable as possible among associations.

It was essential that the elements making up the operation be the same. Minor differences may be difficult or impossible to eliminate but enough similarity should exist to make comparisons meaningful. Relative sameness of an operation narrows it down so that the number of variables is reduced and the comparison of operations made practicable for the purpose of the study.

In this study, the handling of eggs through the cooperatives was broken down into as many as 12 separate operations. These are: collecting, receiving, inspecting, sizing by machine when separate from candling, candling, cartoning, packing cartoned eggs, coopering cases, stacking eggs in holding room, loading out, delivering, and egg breaking. Not all associations engaged in all these operations.

In order to make the costs and labor outputs as comparable as possible among associations studied, it was necessary to determine precisely where each operation began and ended. In the case of labor, this was done by including the pertinent labor elements covered in each operation, as listed below.

1. Collecting (hauling eggs to plant):
  - Loading truck with empty cases
  - Driving truck
  - Loading truck at farms
  - Making out producer and route records

2. Receiving (plant labor):
  - Unloading (including time of trucker)
  - Receiving door deliveries
  - Moving eggs to receiving room
  - Sorting cases
  - Recording receipts
  - Weighing-in cases

3. Inspecting (wholesale grading):
  - Moving eggs to inspectors
  - Removing case covers
  - Candling desired sample
  - Returning eggs to case
  - Replacing case covers
  - Weighing
  - Removing inspected cases
  - Recording and marking inspection results

4. Sizing (by machine when separate from candling):
  - Moving eggs to sizer
  - Removing case covers
  - Placing eggs on machine
  - Placing sized eggs in cases
  - Replacing case covers
  - Removing cases of sized eggs

5. Candling (loose to case):<sup>1</sup>
  - Moving eggs to candlers
  - Removing case covers
  - Obtaining and readying empty cases
  - Putting eggs on sizing machine
  - Packing loose eggs from sizing machine

<sup>1</sup>Per unit labor cost for candling and for cartoning is based upon the actual case output of an operation rather than case input. For example, if 100 cases, of which 15 percent were rejects, went to the cartoning operation, the cost and volumes were allocated based on 85 cases cartoned and 15 cases candled. In some plants all eggs were candled and packed loose in cases. Later a portion of the candled eggs were transferred into cartons. In these instances, cartoning cost was determined by allocating the proportionate share of the total candling cost to cartoning based upon output and then adding the transfer and other pertinent costs.

Candling operation  
Putting eggs in cases  
Recording candling results  
Replacing case covers  
Removing filled cases  
Stamping candled cases  
Weighing after candling



At most cooperatives in this study eggs are candled and cartoned in booths.

6. Cartoning (candling to carton):<sup>1</sup>
  - Moving eggs to candlers
  - Removing case covers
  - Obtaining and setting up cartons
  - Putting eggs on or taking off sizing machine or belt
  - Candling operation
  - Putting eggs in cartons
  - Closing cartons
  - Recording candling results
  - Marking, sealing, and labeling cartons
  - Unloading and storing cartons
7. Packing (cartoned eggs):
  - Stamping, labeling, or marking cartoned cases
  - Sealing cartoned cases
  - Obtaining and readying empty cases

Inserting flats  
Putting cartons in cases  
Closing cases  
Stacking cartoned cases for removal to holding place

8. Coopering (including storing empty cases):

Obtaining shook or used cases  
Making or setting up new cases  
Repairing used cases  
Putting flats and fillers in new cases  
Putting labels on cases during coopering  
Removing coopered cases  
Stacking coopered cases

9. Stacking and holding (in plant):

Stacking (when several high and separate from candler removal)  
Moving cases to holding place  
Sorting cases  
Restacking cases  
Weighing and labeling cases

10. Loading out:

Moving to trucks or railroad cars  
Loading (including time of truckers when helping)  
Making out shipping records, bills of lading, and delivery instructions

11. Delivering (hauling to buyers; truck personnel only):

Driving truck  
Unloading eggs  
Making records of delivery and collections

12. Egg breaking:

Moving to breaking room  
Breaking operation  
Operation of mixer, pump, and the like  
Filling and covering cans  
Putting cans in refrigerator  
Making out breaking records  
Cleaning equipment and room

## Data Collected

During the 2-week period, information was collected at each cooperative, concerning (1) direct costs and labor requirements, (2) indirect costs, and (3) related information.

### Direct Costs and Labor Requirements

Data collected under "direct costs" pertain to direct labor, packing and processing materials, truck operating and contract hauling, and other direct costs.

As used in this report, direct labor costs and direct labor requirements are costs and requirements incurred for a single operation or part of an operation. They, therefore, are separable and can be traced directly to that operation or to one or more of its elements. Direct labor costs are variable. They vary in total amount as the product volume increases or decreases, but on a per unit basis they are affected much less than indirect costs by changes in volume. Labor requirements or outputs per man-hour were determined by dividing the total number of hours required to perform an operation over a period of time by the number of cases handled in the operation during the same period. These outputs are important because they usually reflect labor efficiency more accurately than do dollar-and-cents costs and do not become out-dated as soon. Labor requirements are an important factor affecting differences in unit costs among associations.

Costs for direct labor, in addition to wages and salaries for regular and overtime work, included other associated costs, such as Federal old age benefits, unemployment insurance, workmen's compensation insurance, bonuses, pensions, and hospital insurance. After the labor cost for each employee was determined, his time

and wages were charged to the operation or operations in which he worked. When he worked on more than one operation, his wages were distributed among them on a time basis.

All costs incurred for packing materials were determined according to three types of egg packs used. These are: (1) 30-dozen loose or case pack, (2) 30-dozen or equivalent cartoned pack, and (3) liquid egg pack.

The most important materials were case shells, flats, and fillers or filler flats, case labels, gummed tape, case tags, cartons, carton seals, and cans and lids for liquid eggs. In instances where both new and used materials were employed, it was necessary to determine the proportion of each in order to calculate the average unit cost.

Cost data for operating association trucks and contract trucking charges were obtained.

Other direct costs incurred were service fees for Federal inspection and grading and royalties on machines for setting up and closing cartons.

#### Indirect or Overhead Costs

Indirect costs refer to those costs which are incurred for more than one operation or for parts of more than one operation. They are, therefore, not readily separable and are difficult to trace directly to an individual operation or to its elements. Most indirect costs are fixed costs and change little in total amount when the volume of product changes. But, on a per-unit basis, they decrease when the volume increases and increase when volume is less.

When indirect costs were collected and analyzed, they were divided into labor and other.

Indirect Labor Costs. Indirect labor costs, which include the salaries or wages of the manager, office help, salesmen, fieldmen, janitors, night watchmen, repair and maintenance employees, and plant foremen, were determined for the specific period under study. As such, they represent costs for the same period as direct labor. When the work of some employees was chargeable to both direct and indirect costs, their labor costs were divided accordingly.

Other Indirect Costs. Indirect expenses, other than indirect labor costs, came from the audit report for the latest fiscal year of each association. These annual data were then calculated on a period basis for comparison with the other costs, and the period average applied to current operations. In other words, indirect cost figures, excluding indirect labor, were  $1/26$  of such costs of the fiscal year preceding the period of study.

This method was used inasmuch as indirect cost information was not currently available on a short-time basis for the period of study. Also, annual indirect costs, especially in total, were found to vary little from year to year for any individual association. Therefore, a 2-week apportionment of the indirect costs was considered sufficiently accurate and reliable for this analysis.

Indirect costs on a per-unit basis were calculated by dividing the average period indirect costs by the 2-week average number of cases of eggs received during the 12 months ending with the close of the period of study (volume for the previous 12 months divided by 26). This study did not apportion these costs to individual operations as it did direct costs. It should be pointed out that a comparison of these per-unit indirect costs among associations may, because they are not apportioned by operations, not

be as meaningful as direct costs by operations, inasmuch as the number of services rendered and the relative volume of eggs handled in each operation may vary widely.

Indirect costs, other than indirect labor, include the following expense items:

Plant:

- Heat
- Light, power, and water
- General insurance
- Real estate and personal property taxes
- Maintenance and repair
- Plant supplies (general)
- Depreciation:
  - Buildings
  - Plant equipment
- Miscellaneous

Non-plant:

- Office supplies, stationery, and printing
- Postage
- Telephone and telegraph
- Advertising
- Bad debts
- Interest
- Bank service
- Auditing and legal
- Travel
- Automobile
- Directors' expense
- Annual meeting expense
- Educational expense
- Dues and subscriptions
- Contributions and donations

Depreciation:

- Furniture and fixtures
- Automobile
- Miscellaneous

In instances where marketing associations handle farm supplies or other farm products than eggs, it is necessary to allocate the proper portion of each indirect expense item to the egg department. The records of most associations provided such allocations to the egg department. But even in such cases, modifications were sometimes found necessary in order to handle indirect individual expense allocations uniformly for all associations.

Other Information

Facts other than cost data were obtained during the period of study. These helped explain costs, factors affecting costs, and labor efficiency. For the most part, this information included labor rates for regular and overtime work, amount of overtime, quality of eggs candled and cartoned, grading standards used, number and type of jobs performed by candlers, percentage of eggs sized on farms before reaching the plant, types of plant equipment used, plant and equipment layout, flow of eggs through the plant, volume of eggs handled in relation to capacity, length of farm routes, and frequency of farm pickups. This information will be used in making the analytical report.

## **COST AND OUTPUT COMPARISONS**

Cost comparisons will now be shown for (1) the total direct and indirect costs of eight northeastern associations, (2) direct unit costs and labor output of handling eggs of individual associations by their operations, (3) indirect unit costs by associations, and (4) costs by type of pack.

### **Total Costs**

The total cost of handling eggs through the eight associations for the 2-week period appears in table 2. The total cost was subdivided into direct and indirect costs. Direct costs were further divided into labor, packing

TABLE 2.--Total direct and indirect costs for handling eggs and percentages for handling eggs at eight associations, 2-week period, 1956-57

Item	Amount				Percentage		
	Total eight associations	Average eight associations	Range		Average eight associations	Range	
			Largest association	Smallest association		Largest association	Smallest association
Direct costs:							
Labor	\$43,282.49	\$5,410.31	\$13,561.48	\$2,166.06	31.5	33.1	40.8
Packing materials <sup>1</sup>	49,131.63	6,141.45	13,300.20	1,528.62	35.7	32.5	28.8
Truck <sup>2</sup>	17,392.05	2,174.01	6,246.43	783.81	12.6	15.3	14.8
Other <sup>3</sup>	2,931.53	366.44	2,446.22	45.69	2.1	6.0	.9
Total	112,737.70	14,092.21	35,554.33	4,524.18	81.9	86.9	85.3
Indirect costs:							
Labor	14,255.82	1,781.98	3,406.55	630.72	10.4	8.3	11.9
Other than labor	10,571.02	1,321.38	1,978.19	150.18	7.7	4.8	2.8
Total	24,826.84	3,103.36	5,384.74	780.90	18.1	13.1	14.7
Grand total	137,564.54	17,195.57	40,939.07	5,305.08	100.0	100.0	100.0

<sup>1</sup> Packing materials for loose, cartoned, and liquid eggs.

<sup>2</sup> Includes truck expense of association trucks and charges for contract trucking.

<sup>3</sup> Includes State or Federal inspection fees and royalty for cartoning equipment.

materials, truck, and other costs. Indirect costs were divided into labor and other indirect costs.

Total direct costs for the eight associations for the 2-week periods were \$137,564.54, or an average of \$17,195.57. Direct costs constituted an average of 81.9 percent of the total; indirect costs, 18.1 percent. By associations, the total cost ranged from a high of \$40,939.06 to a low of \$5,305.08. For the highest association, direct costs were 86.8 percent of the total cost. This compared with 85.3 percent for the low association and 81.9 percent for average of eight associations.

Total labor cost, both direct and indirect, accounted for nearly 42 percent of the total cost for the eight associations, 41 percent for the association with the largest total cost and approximately 53 percent for the one with the lowest total cost.

Packing material was the next most important single cost item--36 percent of the total cost for the eight associations, 32 percent for the high-

est association, and 29 percent for the lowest.

Truck costs constituted nearly 13 percent on the average, 15 percent for the highest association, and nearly 15 percent for the lowest. Miscellaneous small direct items and the indirect costs exclusive of indirect labor made up the remaining cost--10 percent for the eight associations, nearly 11 percent for the highest association, and nearly 4 percent for the lowest cost one (table 2).

## Direct Costs and Labor Output

Direct costs in this report are on a case-unit basis for: (1) direct labor, truck, and labor output by individual plant operations, (2) packing materials by type of pack, and (3) other direct costs by operations. The cost groups are discussed in this order below.

### Labor and Truck Costs and Output by Plant Operations

Average direct labor costs for the eight cooperatives by operations

ranged from 2 cents per case for stacking eggs to 87.3 cents for egg breaking (table 3).

Unit costs for labor were relatively high for sizing, collecting, egg breaking, candling, and cartoning. For example, the average costs of these operations, on an individual operation basis, ranged from 14.8 for sizing to 87.3 cents for egg breaking, whereas, lower cost operations such as stacking, receiving, and delivering ranged from 2 to 11.6 cents.

A wide range of labor output existed among the operations. For example, the receiving, stacking, and loading out operations have the largest output per man-hour--an average for the 3 of 98 cases an hour. In contrast, the egg-breaking output was only 1.6 cases and candling and cartoning 2.9 cases (table 4).

No association had direct labor costs that were uniformly high or low or labor outputs in all operations. An association may have the highest labor cost or labor output in one operation and the lowest in another as compared with other associations. A comparison of direct labor costs by associations and operations (table 3) indicates the association with the lowest and highest cost for each operation.

Table 3 also shows the average direct labor cost and range in costs for each operation. Association A had the lowest direct labor cost per case for inspection of wholesale grade eggs but had the highest labor cost for candling and cartoning. Association F had the lowest labor cost of the eight associations for packing cartoned eggs, loading out, and delivering eggs to buyers. Association H had the lowest labor cost for three operations--

TABLE 3.--Cost of direct labor by operations<sup>1</sup> and associations, 2-week period, 1956-57

Association	Collecting	Receiving	Inspecting	Sizing	Candling	Cartoning	Packing cartoned eggs	Coopering cases	Stacking	Loading out	Delivering
Cents per case											
A	( <sup>2</sup> )	2.2	3.2	( <sup>3</sup> )	75.4	72.4	11.7	2.5	2.1	1.5	( <sup>2</sup> )
B	22.3	2.6	10.5	( <sup>3</sup> )	36.3	50.9	11.8	3.1	2.3	2.0	6.6
C	( <sup>2</sup> )	1.9	7.4	( <sup>3</sup> )	68.1	46.9	7.3	3.2	1.9	2.8	( <sup>2</sup> )
D	15.4	1.9	( <sup>4</sup> )	7.2	50.3	56.1	12.3	2.1	1.4	4.1	13.9
E	20.1	1.3	9.4	30.4	47.9	46.1	10.3	2.7	1.6	2.5	11.6
F	20.8	2.1	( <sup>4</sup> )	( <sup>3</sup> )	49.0	50.3	4.5	2.0	1.5	1.0	4.8
G	13.5	2.7	( <sup>4</sup> )	11.5	49.0	53.6	6.3	3.0	3.4	1.9	22.9
H	27.3	1.7	( <sup>4</sup> )	10.0	41.8	40.3	13.9	1.6	1.7	1.0	9.9
Average	19.9	2.1	8.8	14.8	52.2	52.1	9.8	2.5	2.0	2.1	11.6
Range:											
Low	13.5	1.3	3.2	7.2	36.3	40.3	4.5	1.6	1.4	1.0	4.8
High	27.3	2.7	10.5	30.4	75.4	72.4	13.9	3.2	3.4	4.1	22.9

Low  
High

<sup>1</sup> Only one association performed the egg breaking operation. The direct labor cost was 87.3 cents a case.

<sup>2</sup> Contract hauling.

<sup>3</sup> Not separable from candling and cartoning operations.

<sup>4</sup> Operation not performed.

TABLE 4.--Labor output per man-hour by operations<sup>1</sup> and associations, 2-week period, 1956-57

Associ- ation	Collect- ing	Receiv- ing	Inspect- ing	Sizing	Candling	Carton- ing	Packing cartoned eggs	Coop- ering cases	Stack- ing	Loading out	Deliver- ing
Cases per man-hour											
A	( <sup>2</sup> )	71.6	[60.1]	( <sup>3</sup> )	[2.4]	2.7	14.0	65.2	78.6	132.7	( <sup>2</sup> )
B	8.6	63.9	[14.8]	( <sup>3</sup> )	[3.8]	2.7	11.6	38.8	64.1	75.8	[29.6]
C	( <sup>2</sup> )	121.5	32.1	( <sup>3</sup> )	[2.4]	3.4	19.2	[32.4]	120.1	77.1	( <sup>2</sup> )
D	[14.0]	109.8	( <sup>4</sup> )	[21.7]	2.9	2.6	13.4	[141.3]	[162.9]	[57.6]	16.2
E	10.4	[150.7]	23.0	[3.9]	2.9	3.1	14.6	48.8	84.7	88.9	23.1
F	[5.7]	[56.2]	( <sup>4</sup> )	( <sup>3</sup> )	2.4	[2.4]	[26.4]	58.5	81.2	118.1	25.0
G	14.0	63.1	( <sup>4</sup> )	13.6	2.8	2.5	23.8	51.2	[53.7]	97.8	[11.9]
H	6.5	114.7	( <sup>4</sup> )	14.3	3.5	[3.6]	[10.8]	102.2	107.5	[196.3]	19.5
Average	9.9	93.9	32.5	13.4	2.9	2.9	16.7	67.3	94.1	105.5	20.9
Range:											
Low	5.7	56.2	14.8	3.9	2.4	2.4	10.8	32.4	53.7	57.6	11.9
High	14.0	150.7	60.1	21.7	3.8	3.6	26.4	141.3	162.9	196.3	29.6

Low  
 High

<sup>1</sup> Only one association performed the breaking operation. The direct labor output was 1.6 cases per man-hour.

<sup>2</sup> Contract hauling.

<sup>3</sup> Not separable from candling and cartonning operation.

<sup>4</sup> Operation not performed.

cartoning, coopering, and loading out; but the highest for two--collecting and packing cartoned eggs.

A similar comparison of labor output per man-hour for each operation appears in table 4. As with direct labor cost per case, no association had a consistently low or high output per man-hour for all operations, although Association D had the highest output in four operations--collecting, sizing, coopering cases, and stacking cases of eggs in the holding room, but had the lowest output per man-hour for loading out eggs. Association F had the lowest output for three operations--collecting, receiving, and cartonning and only one operation with the highest output--packing cartoned eggs.

On a functional basis, tables 5 to 17 give figures on direct labor cost and output by operations chronolog-

ically, from the collection of eggs at the farm to the delivery of eggs to the buyer.

The associations are arrayed in each table according to cases of eggs handled in the operation and grouped into two volume groups, upper and lower, in order to indicate the effect of volume on unit cost and output per man-hour.

**Collecting.** Data were available at six associations on the direct labor cost and output per man-hour of association employees collecting eggs (table 5).

Total volume of eggs collected by employees apparently had little influence on direct labor cost per case since the upper volume group of associations averaging 6,357 cases per association had about the same direct labor cost as the lower volume group

TABLE 5.--Collecting eggs from farms: Average direct labor cost and output per man-hour, six associations, 2-week period, 1956-57<sup>1</sup>

Group and association	Collecting cost	Output per man-hour
Upper volume group: <sup>2</sup>	<u>Cents per case</u>	<u>Cases</u>
B	22.3	8.6
D	15.4	14.0
E	<u>20.1</u>	<u>10.4</u>
Average 3 associations <sup>3</sup>	<u>19.3</u>	<u>11.0</u>
Lower volume group: <sup>4</sup>		
G	13.5	14.0
H	27.3	6.5
F	<u>20.8</u>	<u>5.7</u>
Average 3 associations <sup>3</sup>	<u>20.5</u>	<u>8.7</u>
Average 6 associations <sup>3</sup>	<u>19.9</u>	<u>9.9</u>
Range:		
Low	13.5	5.7
High	27.3	14.0

<sup>1</sup> Does not include contract hauling.

<sup>2</sup> Average volume collected was 6,357 cases.

<sup>3</sup> Unweighted average.

<sup>4</sup> Average volume collected was 1,914 cases.

averaging only 1,914 cases per association--19.3 cents as compared with 20.5 cents a case.



Collecting eggs from producers is a service rendered by most cooperatives.

The output per man-hour averaged 11 cases for the upper volume group of associations as compared with 8.7 cases for the lower volume group--a difference of 2.3 cases per man-hour.

A more complete breakdown of collecting costs appears in table 6. Total collecting costs for association trucks, including direct labor, were about 3.7 cents a case more for the lower volume group of associations than for the upper volume group. Total collecting costs with association trucks ranged from 23.2 to 52.1 cents a case. For the three associations using both their own trucks and contract trucks in collecting eggs, the total collecting cost with association trucks averaged 33.6 cents as compared with 43.3 cents a case with contract trucks. The average volume collected with association trucks was larger than the volume with contract trucks.

**Receiving.** Receiving labor cost averaged nearly the same for both upper and lower volume groups but slightly higher for the higher volume group--2.2 as compared with 2.0 cents per case (table 7). The cost ranged from 1.3 to 2.7 cents per case. Output per man-hour averaged slightly less for the upper volume group than the lower group--91.7 as compared with 96.2 cases. The range was from 56.2 to 150.7 cases per man-hour (table 7).

**Inspecting.** Only 4 of the 8 associations performed the service of inspecting eggs handled on a wholesale grade basis. Table 8 shows that the direct labor cost ranged from 3.2 cents to 10.5 cents a case and averaged 7.6 cents. Output per man-hour ranged from 14.8 to 60.1 cases and averaged 32.5 cases. An examination of the individual association costs and labor outputs indicate that the direct labor cost per case increased rapidly as output per man-hour decreased.

TABLE 6.--Collecting eggs from farms: Average direct costs, seven associations, 2-week period, 1956-57

Group and association	Association trucks			Contract trucks <sup>1</sup>	Total
	Direct labor	Truck expense	Total		
<u>Cents per case</u>					
Upper volume group <sup>2</sup>					
B	22.3	12.3	34.6	60.7	<sup>3</sup> 41.1
C	--	--	--	28.8	28.8
D	15.4	13.0	28.4	38.8	<sup>3</sup> 30.8
F	<u>20.8</u>	<u>17.1</u>	<u>37.9</u>	<u>45.0</u>	<sup>3</sup> <u>44.5</u>
Average <sup>4</sup>	<u>19.5</u>	<u>14.1</u>	<u>33.6</u>	<u>43.3</u>	<u>36.3</u>
Lower volume group <sup>5</sup>					
E	20.1	16.4	36.5	--	--
G	13.5	9.7	23.2	--	--
H	<u>27.3</u>	<u>24.8</u>	<u>52.1</u>	<u>--</u>	<u>--</u>
Average <sup>4</sup>	<u>20.3</u>	<u>17.0</u>	<u>37.3</u>	<u>--</u>	<u>--</u>
Average all associations <sup>4</sup>	<u>19.9</u>	<u>15.6</u>	<u>35.5</u>	<u>43.3</u>	<u>36.3</u>
Range:					
Low	13.5	9.7	23.2	28.8	28.8
High	27.3	24.8	52.1	60.7	44.5

<sup>1</sup> Cost or charge to association or association patrons.<sup>2</sup> Average volume collected was 9,048 cases.<sup>3</sup> Weighted average of figures for association and contract trucks.<sup>4</sup> Unweighted average of vertical column.<sup>5</sup> Average volume collected was 2,907 cases.

TABLE 7.--Receiving eggs: Average direct labor cost and output per man-hour, eight associations, 2-week period, 1956-57

Group and association	Receiving cost	Output per man-hour
	<u>Cents per case</u>	<u>Cases</u>
Upper volume group: <sup>1</sup>		
A	2.2	71.6
B	2.6	63.9
C	1.9	121.5
D	<u>1.9</u>	<u>109.8</u>
Average 4 associations <sup>2</sup>	<u>2.2</u>	<u>91.7</u>
Lower volume group: <sup>3</sup>		
F	2.1	56.2
E	1.3	150.7
G	2.7	63.1
H	<u>1.7</u>	<u>114.7</u>
Average 4 associations <sup>2</sup>	<u>2.0</u>	<u>96.2</u>
Average 8 associations <sup>2</sup>	<u>2.1</u>	<u>93.9</u>
Range:		
Low	1.3	56.2
High	2.7	150.7

<sup>1</sup> Average volume received was 15,111 cases.<sup>2</sup> Unweighted average.<sup>3</sup> Average volume received was 3,937 cases.

TABLE 8.--Inspecting eggs: Average direct labor cost and output per man-hour, four associations, 2-week period, 1956-57

Association	Inspecting cost	Output per man-hour
	<u>Cents per case</u>	<u>Cases</u>
A	3.2	60.1
C	7.4	32.1
E	9.4	23.0
B	<u>10.5</u>	<u>14.8</u>
Average <sup>1</sup>	<u>7.6</u>	<u>32.5</u>
Range:		
Low	3.2	14.8
High	10.5	60.1

<sup>1</sup> Unweighted average.

**Sizing.** Only 4 of the 8 associations performed the sizing operation separately from the candling and carton-ing service. Data on sizing appear in table 9. The direct labor cost for the 2 associations in the upper volume group averaged 8.6 cents a case or 12.4 cents less than the average cost of the lower volume group. Output per

TABLE 9.--Sizing eggs: Average direct labor cost and output per man-hour, four associations, 2-week period 1956-57

Group and association	Sizing cost	Output per man-hour
	<u>Cents per case</u>	<u>Cases</u>
Upper volume group: <sup>1</sup>		
D	7.2	21.7
H	<u>10.0</u>	<u>14.3</u>
Average 2 associations <sup>2</sup>	<u>8.6</u>	<u>18.0</u>
Lower volume group: <sup>3</sup>		
G	11.5	13.6
E	<u>30.4</u>	<u>3.9</u>
Average 2 associations <sup>2</sup>	<u>21.0</u>	<u>8.8</u>
Average 4 associations <sup>2</sup>	<u>14.8</u>	<u>13.4</u>
Range:		
Low	7.2	3.9
High	30.4	21.7

<sup>1</sup> Average volume sized was 3,599 cases.

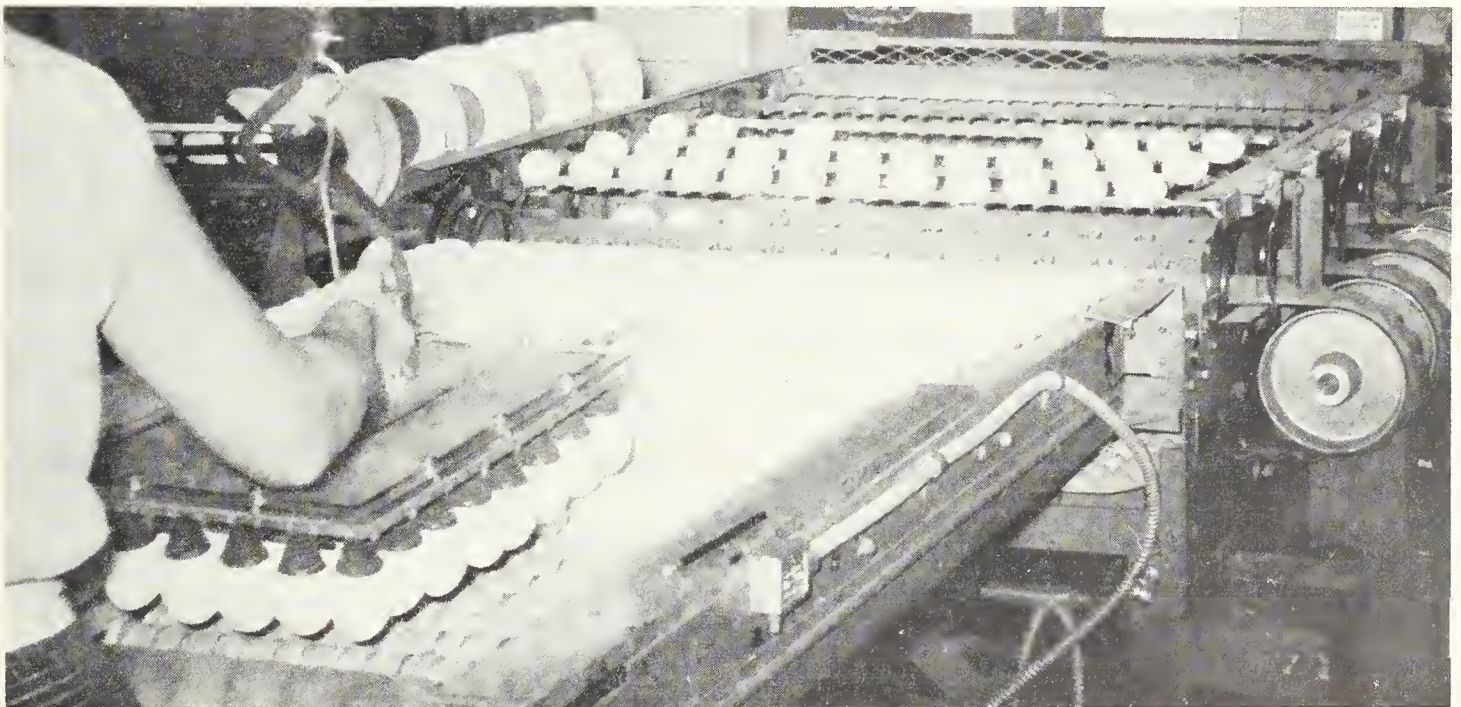
<sup>2</sup> Unweighted average.

<sup>3</sup> Average volume sized was 1,482 cases.

man-hour averaged 18.0 cases for the upper volume group but only 8.8 cases for the lower volume group. Unit labor costs increased as output per man-hour decreased.

**Candling.** This operation covers eggs candled loose into cases. Direct labor costs and eggs candled per man-hour are shown in table 10. Labor is divided between that for the actual candling of eggs and auxiliary labor. Auxiliary labor is that required to supply eggs to the candlers, to size the eggs when separate from candling, to supply materials, and to remove the eggs from the candlers after candling.

The direct labor cost per case for actual candling of eggs averaged approximately 16 cents less for the



One employee using a four-dozen pneumatic lift supplies eggs for this egg sizing machine.

TABLE 10.--Candling eggs: Average direct labor cost and output per man-hour, eight associations, 2-week period, 1956-57

Group and association	Candling costs			Output per man-hour		
	Candling only	Auxiliary labor <sup>1</sup>	Total labor	Candling only	Auxiliary labor <sup>1</sup>	Total labor
	<u>Cents per case</u>			<u>Cases</u>		
Upper volume group <sup>2</sup>						
B	22.4	13.8	36.2	6.1	10.3	3.8
E	30.9	17.0	47.9	4.8	7.7	2.9
H	27.0	14.8	41.8	5.3	10.1	3.5
D	<u>42.9</u>	<u>7.4</u>	<u>50.3</u>	<u>3.3</u>	<u>21.4</u>	<u>2.9</u>
Average 4 associations <sup>3</sup>	<u>30.8</u>	<u>13.2</u>	<u>44.1</u>	<u>4.9</u>	<u>12.4</u>	<u>3.3</u>
Lower volume group <sup>4</sup>						
G	40.3	8.7	49.0	3.3	18.3	2.8
C	40.3	27.8	68.1	4.2	5.5	2.4
F	46.4	2.6	49.0	2.6	46.5	2.4
A	<u>60.6</u>	<u>14.8</u>	<u>75.4</u>	<u>3.4</u>	<u>8.5</u>	<u>2.4</u>
Average 4 associations <sup>3</sup>	<u>46.9</u>	<u>13.5</u>	<u>60.4</u>	<u>3.4</u>	<u>19.7</u>	<u>2.5</u>
Average 8 associations <sup>3</sup>	<u>38.9</u>	<u>13.4</u>	<u>52.2</u>	<u>4.1</u>	<u>16.0</u>	<u>2.9</u>
Range:						
Low	22.4	2.6	36.2	2.6	5.5	2.4
High	60.6	27.8	75.4	6.1	46.5	3.8

<sup>1</sup> Includes such labor as supplying eggs to candlers, sizing, and removing eggs after candling.

<sup>2</sup> Average volume candled was 3,590 cases.

<sup>3</sup> Unweighted average.

<sup>4</sup> Average volume candled was 630 cases.

upper volume group than that for the lower volume group--30.8 as compared with 46.9 cents. The actual candling labor cost for association A is abnormally high because some regular candlers were ill during the study and were replaced by more highly paid supervisory employees. Also the increased pre-Easter demand for cartoned eggs made it necessary to shift employees from other plant operations to the cartoning department. Wage rates of these employees were higher than those of the regular candlers. More hours of overtime were used than during normal cartoning operations. Under normal conditions the total candling cost would have been approximately 10 cents a case less than during the period of the study.

Auxiliary labor costs per case were approximately 13 cents for both the upper and lower volume groups.



New type equipment speeds up the candling operation.

The average candling output per man-hour was more for the upper volume group candling an average of

3,590 cases during the 2 weeks than for the lower volume group candling an average of only 630 cases during the period. Labor output for actual candling ranged from 2.6 to 6.1 cases per man-hour. The association with the highest actual candling output was using new type equipment. The association with the lowest output candled and graded by hand. Total candling labor output ranged from 2.4 to 3.8 cases. The association lowest in volume candled was also one of the three lowest in total candling labor output per man-hour. The range among associations in total candling labor output per man-hour was considerably less than the range in actual candling labor.

Cartoning. Cartoning labor also has been divided into that for actual cartoning and for auxiliary labor. Auxiliary labor includes setting up cartons but does not include packing the

cartoned eggs into cases or boxes. The data on cartoning labor costs and output per man-hour are shown in table 11.

Although there was a wide range among associations both in direct labor costs per case and cartoning output per man-hour, there was not much difference in the averages for the higher and lower volume groups--particularly if association A with the abnormally high actual labor cost were not included. The upper volume group cartoned an average of 5,106 cases, and the lower volume group, 1,990 cases during the 2-week period.

Packing Cartoned Eggs. Although packing cartoned eggs into cases is essentially a part of the cartoning operation, direct labor cost and labor output data were obtained separately for this operation (table 12). Direct labor cost ranged from 4.5 to 13.9 cents a case and averaged nearly 2

TABLE 11.--Cartoning eggs: Average direct labor cost and output per man-hour, eight associations, 2-week period, 1956-57

Group and association	Costs			Output per man-hour		
	Cartoning only	Auxiliary labor <sup>1</sup>	Total labor	Cartoning only	Auxiliary labor <sup>1</sup>	Total labor
	<u>Cents per case</u>			<u>Cases</u>		
Upper volume group <sup>2</sup>						
B	22.5	28.4	50.9	6.1	4.9	2.7
C	38.3	8.6	46.9	4.2	16.3	3.4
A	60.3	12.1	72.4	3.4	12.8	2.7
F	<u>46.3</u>	<u>4.0</u>	<u>50.3</u>	<u>2.6</u>	<u>29.5</u>	<u>2.4</u>
Average 4 associations <sup>3</sup>	<u>41.9</u>	<u>13.3</u>	<u>55.1</u>	<u>4.1</u>	<u>15.9</u>	<u>2.8</u>
Lower volume group <sup>4</sup>						
D	43.1	13.1	56.1	3.3	12.4	2.6
G	40.3	13.3	53.6	3.3	11.2	2.5
E	29.8	16.3	46.1	5.0	8.4	3.1
H	<u>27.0</u>	<u>13.3</u>	<u>40.3</u>	<u>5.3</u>	<u>11.1</u>	<u>3.6</u>
Average 4 associations <sup>3</sup>	<u>35.1</u>	<u>14.0</u>	<u>49.0</u>	<u>4.2</u>	<u>10.8</u>	<u>3.0</u>
Average 8 associations <sup>3</sup>	<u>38.4</u>	<u>13.6</u>	<u>52.1</u>	<u>4.1</u>	<u>13.3</u>	<u>2.9</u>
Range:						
Low	22.5	4.0	40.3	2.6	4.9	2.4
High	60.3	28.4	72.4	6.1	29.5	3.6

<sup>1</sup> Includes such labor as supplying eggs to candlers, sizing, and setting up cartons.

<sup>2</sup> Average volume cartoned was 5,106 cases.

<sup>3</sup> Unweighted average.

<sup>4</sup> Average volume cartoned was 1,990 cases.

TABLE 12.--Packing cartoned eggs: Average direct labor cost and output per man-hour, eight associations, 2-week period 1956-57

Group and association	Packing cost	Output per man-hour
	<u>Cents per case</u>	<u>Cases</u>
Upper volume group <sup>1</sup>		
B	11.8	11.6
C	7.3	19.2
A	11.7	14.0
F	<u>4.5</u>	<u>26.4</u>
Average 4 associations <sup>2</sup>	<u>8.8</u>	<u>17.8</u>
Lower volume group <sup>3</sup>		
D	12.3	13.4
G	6.3	23.8
E	10.3	14.6
H	<u>13.9</u>	<u>10.8</u>
Average 4 associations <sup>2</sup>	<u>10.7</u>	<u>15.7</u>
Average 8 associations <sup>2</sup>	<u>9.8</u>	<u>16.7</u>
Range:		
Low	4.5	10.8
High	13.9	26.4

<sup>1</sup> Average volume packed was 5,106 cases.

<sup>2</sup> Unweighted average.

<sup>3</sup> Average volume packed was 1,990 cases.

cents less for the larger volume group than for the lower volume group--8.8 cents as compared with 10.7 cents.

The number of 30-dozen cases packed per man-hour ranged from 10.8 to 26.4. The associations in the upper volume group packed an average of 17.8 cases per man-hour or only 2.1 cases more than the average of 15.7 cases for the lower volume group.

**Coopering Cases.** Coopering egg cases is a comparatively low cost operation. The direct labor cost among 8 associations ranged from 1.6 to 3.4 cents per case and averaged 2.5 cents. There was only 0.5 cent per case in favor of the upper volume group of associations coopering an average of 14,159 cases during the 2-week period as compared with lower volume group coopering an average of only 4,158 cases (table 13).

TABLE 13.--Coopering egg cases: Average direct labor cost and output per man-hour, eight associations, 2-week period, 1956-57

Group and association	Coopering cost	Output per man-hour
	<u>Cents per case</u>	<u>Cases</u>
Upper volume group <sup>1</sup>		
A	2.5	65.2
B	3.1	38.8
C	3.2	32.4
F	<u>2.0</u>	<u>58.5</u>
Average 4 associations <sup>2</sup>	<u>2.7</u>	<u>48.7</u>
Lower volume group <sup>3</sup>		
H	1.6	102.2
D	2.1	141.3
E	2.7	48.8
G	<u>2.5</u>	<u>51.2</u>
Average 4 associations <sup>2</sup>	<u>2.2</u>	<u>85.9</u>
Average 8 associations <sup>2</sup>	<u>2.5</u>	<u>67.3</u>
Range:		
Low	1.6	32.4
High	3.2	141.3

<sup>1</sup> Average volume coopered was 14,159 cases.

<sup>2</sup> Unweighted average.

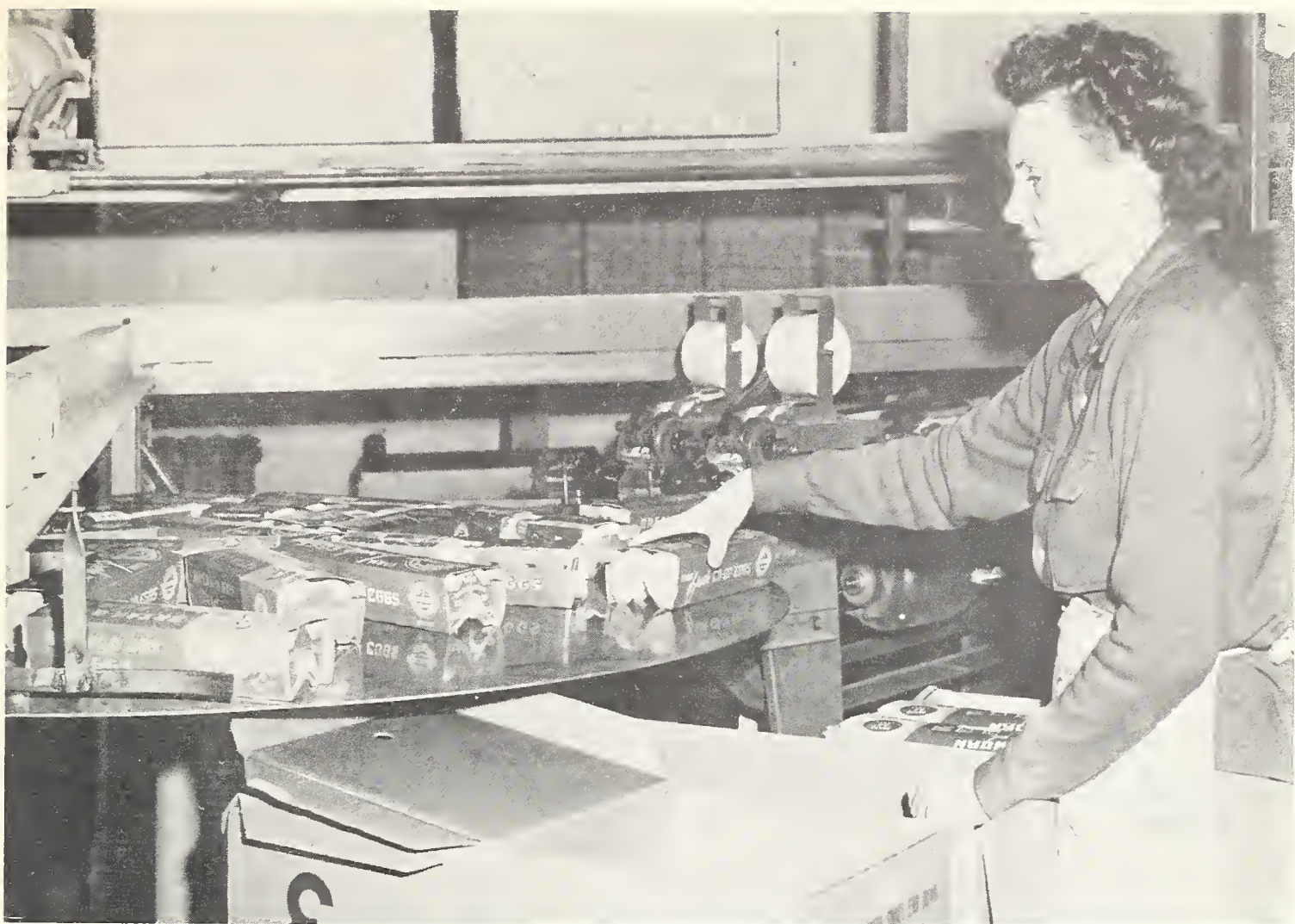
<sup>3</sup> Average volume coopered was 4,158 cases.

Output per man-hour averaged less for the upper volume group than that for the lower volume group--48.7 as compared with 85.9 cases.

**Stacking.** Moving cases of eggs to the holding room and stacking them there also is a comparatively low cost operation. The direct labor cost averaged only 2 cents per 30-dozen case and ranged from 1.4 to 3.4 cents (table 14). The labor cost averaged 1.9 cents per case for the upper volume group or 0.2 cent less than for the lower volume group.

Output per man-hour averaged 24.6 cases more for the upper volume group--106.4 as compared with 81.8 cases. The volume stacked per man-hour ranged from 53.7 to 162.9 cases (table 14).

**Loading Out.** The direct labor cost of loading out eggs averaged only 2.1



Packing cartoned eggs from turning round table.



Power lift trucks are labor savers in moving and loading out eggs.

cents per 30-dozen case for eight associations and ranged from 1 to 4.1 cents per case (table 15). Associations in the lower volume group loaded out eggs for one cent lower average direct labor cost per case than did those in the upper volume group--1.6 as compared with 2.6 cents. The two associations with the lowest labor cost of 1 cent a case loaded eggs directly from holding room to truck by means of a power belt conveyor requiring a minimum amount of labor. The association with highest labor cost used a large portion of relatively high cost labor in loading out.

Labor output per man-hour averaged nearly 40 percent more for the lower volume group loading out an average of 3,879 cases during the 2 week period as compared with the

TABLE 14.--Stacking eggs: Average direct labor cost and output per man-hour, eight associations, 2-week period, 1956-57

Group and association	Stacking cost	Output per man-hour
	<u>Cents per case</u>	<u>Cases</u>
Upper volume group <sup>1</sup>		
A	2.1	78.6
B	2.3	64.1
C	1.9	120.1
D	<u>1.4</u>	<u>162.9</u>
Average 4 associations <sup>2</sup>	<u>1.9</u>	<u>106.4</u>
Lower volume group <sup>3</sup>		
F	1.5	81.2
E	1.6	84.7
G	3.4	53.7
H	<u>1.7</u>	<u>107.5</u>
Average 4 associations <sup>2</sup>	<u>2.1</u>	<u>81.8</u>
Average 8 associations <sup>2</sup>	<u>2.0</u>	<u>94.1</u>
Range:		
Low	1.4	53.7
High	3.4	162.9

<sup>1</sup> Average volume stacked was 14,822 cases.

<sup>2</sup> Unweighted average.

<sup>3</sup> Average volume stacked was 3,767 cases.

upper volume group averaging 15,266 cases. The range in output was from 57.6 to 196.3 cases per man-hour (table 15).

**Delivering.** The costs of delivering eggs to buyers was obtained at six northeastern associations. Direct labor cost and labor output per man-hour for delivering eggs to buyers in association-owned trucks is shown in table 16. The direct labor cost varied from 4.8 to 22.9 cents a case and averaged 11.6 cents. The labor cost for the upper volume group averaged higher than for the lower group--16.1 cents a case delivered compared with 7.1 cents. The distance eggs are hauled to market has an important effect on delivery labor costs per case and may outweigh the effect of volume.

Labor output ranged from 11.9 to 29.6 cases delivered per man-hour and averaged nearly 21 cases. Labor

TABLE 15.--Loading out eggs: Average direct labor cost and output per man-hour, eight associations, 2-week period, 1956-57

Group and association	Loading out cost	Output per man-hour
	<u>Cents per case</u>	<u>Cases</u>
Upper volume group <sup>1</sup>		
A	1.5	132.7
B	2.0	75.8
C	2.8	77.1
D	<u>4.1</u>	<u>57.6</u>
Average 4 associations <sup>2</sup>	<u>2.6</u>	<u>85.8</u>
Lower volume group <sup>3</sup>		
E	2.5	88.9
F	1.0	118.1
G	1.9	97.8
H	<u>1.0</u>	<u>196.3</u>
Average 4 associations <sup>2</sup>	<u>1.6</u>	<u>125.3</u>
Average 8 associations <sup>2</sup>	<u>2.1</u>	<u>105.5</u>
Range:		
Low	1.0	57.6
High	4.1	196.3

<sup>1</sup> Average volume loaded out was 15,266 cases.

<sup>2</sup> Unweighted average.

<sup>3</sup> Average volume loaded out was 3,879 cases.

hours involved in delivering eggs include time from plant to point of delivery, unloading, and return to the plant. Length of delivery routes, therefore, is an important factor affecting the volume of eggs delivered per man-hour.

A more complete breakdown of delivering costs is shown in table 17. This table shows costs for direct labor, truck operating, and in total by plants for association trucks, contract hauling, and the grand total for collecting costs.

Total delivering costs with association trucks ranged from 10.2 to 27.8 cents a case and averaged 20.5 cents for six associations. Average total costs for association trucks were approximately the same for the two volume groups although the average total volume delivered by the upper volume group was 7,863 cases as

TABLE 16.--Delivering eggs: Average direct labor cost and output per man-hour, six associations, 2-week period, 1956-57<sup>1</sup>

Group and association	Delivering cost	Output per man-hour
	<u>Cents per case</u>	<u>Cases</u>
Upper volume group <sup>2</sup>		
E	11.6	23.1
G	22.9	11.9
D	<u>13.9</u>	<u>16.2</u>
Average 3 associations <sup>3</sup>	<u>16.1</u>	<u>17.1</u>
Lower volume group <sup>4</sup>		
F	4.8	25.0
B	6.6	29.6
H	<u>9.9</u>	<u>19.5</u>
Average 3 associations <sup>3</sup>	<u>7.1</u>	<u>24.7</u>
Average 6 associations <sup>3</sup>	<u>11.6</u>	<u>20.9</u>
Range:		
Low	4.8	11.9
High	22.9	29.6

<sup>1</sup> Does not include contract hauling.

<sup>2</sup> Average volume delivered was 4,736 cases.

<sup>3</sup> Unweighted average.

<sup>4</sup> Average volume delivered was 1,981 cases.

compared with 2,789 cases for the lower volume group.

For the two associations delivering eggs in both owned and contract trucks, the unit cost was considerably more for contract trucks than for owned trucks.

### Packing Materials

Total cost of materials used in packing eggs in 30-dozen cases or equivalent appears in table 18. The comparative data are for two different case packs of eggs--loose (case-packed) and cartoned.

Only one association performed an egg-breaking and packing operation. Its packing materials cost was 53.7 cents per 30-dozen case equivalent.

Loose Pack. The cost of materials used in the loose pack ranged from 7.2 to 57.7 cents per 30-dozen case and averaged 40 cents. The associa-

TABLE 17.--Delivering eggs to buyers: Average direct costs, six associations, 2-week period, 1956-57

Group and association	Association trucks			Contract trucks <sup>1</sup>	Total
	Direct labor	Truck expense	Total		
<u>Cents per case</u>					
Upper volume group <sup>2</sup>					
B	6.6	5.2	11.8	31.2	<sup>3</sup> 29.1
E	11.6	10.4	22.0	--	--
D	<u>13.9</u>	<u>13.9</u>	<u>27.8</u>	<u>40.3</u>	<sup>3</sup> <u>30.8</u>
Average <sup>4</sup>	<u>10.7</u>	<u>9.8</u>	<u>20.5</u>	<u>35.8</u>	<u>30.0</u>
Lower volume group <sup>5</sup>					
G	22.9	3.7	26.6	--	--
F	4.8	5.4	10.2	--	--
H	<u>9.9</u>	<u>14.6</u>	<u>24.5</u>	<u>--</u>	<u>--</u>
Average <sup>4</sup>	<u>12.5</u>	<u>7.9</u>	<u>20.4</u>	<u>--</u>	<u>--</u>
Average all associations <sup>4</sup>	<u>11.6</u>	<u>8.9</u>	<u>20.5</u>	<u>35.8</u>	<u>30.0</u>
Range:					
Low	4.8	3.7	10.2	31.2	29.1
High	<u>22.9</u>	<u>14.6</u>	<u>27.8</u>	<u>40.3</u>	<u>30.8</u>

<sup>1</sup> Cost or charge to association patrons.

<sup>2</sup> Average volume delivered was 7,863 cases.

<sup>3</sup> Weighted average of figures for association and contract trucks.

<sup>4</sup> Unweighted average of vertical columns.

<sup>5</sup> Average volume delivered was 2,789 cases.

TABLE 18.--Packing materials: Total cost for loose and cartoned packed eggs, eight associations, 2-week period, 1956-57

Association	Loose pack	Cartoned pack
	Cents per case <sup>1</sup>	
A	44.4	109.8
B	41.3	99.2
C	45.6	98.6
D	57.7	104.0
E	44.2	89.7
F	7.2	81.5
G	35.1	94.5
H	44.3	94.4
Average <sup>2</sup>	40.0	96.5
Range:		
Low	7.2	31.5
High	57.7	109.8

<sup>1</sup> Materials cost calculated on basis of 30 dozen eggs per case.

<sup>2</sup> Unweighted average.

tion with the low cost for loose pack materials of 7.2 cents per case used mostly used cases, flats, and fillers. The other associations used mostly new materials.

**Cartoned Pack.** Cost of materials in the cartoned pack ranged from 81.5 to 109.8 cents per case and averaged 96.5 cents or 56.5 cents more than the average cost of materials for the loose pack. Materials in the cartoned pack include 30 one-dozen egg cartons. This accounted for most of the difference in cost of materials between the two packs.

### Other Direct Costs

There are three other direct costs: replacement cost of eggs damaged or of unsatisfactory quality; service fees for Federal inspection; and royalty<sup>2</sup> on machines for setting up and closing cartons.

This study did not attempt to determine costs of replacing eggs unfit for the candling and cartoning packs. Re-

<sup>2</sup> Charge made by the manufacturer of equipment for its use. The charge usually varies with the volume cartoned during a given period.

placement costs varied widely from association to association and were chiefly dependent upon egg quality standards, sales outlets, relative prices, and association policies.

Direct costs for Federal inspection and royalties appear in table 19. Inspection fees were usually 15 percent of the Federal inspector's salary. They were allocated to inspecting, candling, and cartoning in proportion to the case output in each operation. Royalty on cartoning machines was charged to the cartoning operation.

### Total Direct Costs

In order to determine total direct costs by operations, it is necessary to add, whenever pertinent, the labor, packing materials, truck, and other direct costs. A summary table (table 20) combines direct labor costs from table 3, packing materials costs from table 18, truck costs from tables 6 and 17, and other direct costs from table 19. To illustrate, the average direct labor cost for the collecting operation was 19.9 cents a case. No packing materials were used for this operation, but operating expenses of association trucks averaged 23.9 cents a case, making a total average direct cost of 43.8 cents a case for this operation. In the receiving operation, labor constituted the only direct cost: averaging 2.1 cents a case. On the other hand, in the cartoning operation there were direct costs for labor, packing materials, Federal inspection, and royalty on cartoning equipment. These costs averaged a total of \$1.52 a case (table 20).

### Indirect Costs

Total indirect costs do not fluctuate much with total volume of eggs received. However, per-unit indirect costs fluctuate considerably with changes in volume. Since it was not feasible to visit all associations during the same period of their seasonal

TABLE 19.--Costs of inspection fee and royalty for cartoning equipment and eggs handled by specified operations, eight associations, 2-week period, 1956-57

Associations	Inspecting	Candling	Cartoning			Eggs handled		
	Federal or State inspection	Federal or State inspection	Federal or State inspection	Royalty cartoning equipment	Total	Inspected	Candled	Cartoned
				<u>Cents per case</u>			<u>Cases</u>	
A	( <sup>1</sup> )	0.2	0.2	1.5	1.7	22,018	362	4,143
B	.2	.2	.2	<sup>2</sup> 15.0	15.2	2,920	8,536	7,366
C	( <sup>3</sup> )	.7	.7	.7	1.4	13,847	560	5,084
D	--	--	--	.8	.8	--	1,534	3,067
E	--	.6	.6	1.5	2.1	--	2,446	1,606
F	--	2.5	2.5	.6	3.1	--	535	3,830
G	--	.8	.8	.9	1.7	--	1,061	2,053
H	--	1.0	1.0	2.7	3.7	--	1,844	753
Average <sup>4</sup>	.2	.9	.9	3.0	3.7	12,928	2,110	3,488
Range:								
Low	( <sup>3</sup> )	.2	.2	.6	.8	2,920	362	753
High	.2	2.5	2.5	15.0	15.2	22,018	8,536	7,366

<sup>1</sup> Less than 0.1 cent.

<sup>2</sup> Includes grading equipment as well as equipment for setting up and closing cartons.

<sup>3</sup> Less than 0.05 cent.

<sup>4</sup> Unweighted average.

TABLE 20.--Average total direct costs of operations, eight associations, 2-week period, 1956-57

Operation	Labor	Packing materials	Truck <sup>1</sup>	Other	Total
			<u>Cents per case</u>		
Collecting	19.9	--	15.6	--	35.5
Receiving	2.1	--	--	--	2.1
Inspecting	7.6	44.8	--	<sup>2</sup> .2	52.6
Sizing	14.8	--	--	--	14.8
Candling	52.2	40.0	--	<sup>2</sup> .9	93.1
Cartoning	52.1	96.5	--	<sup>3</sup> 3.9	152.5
Packing cartoned eggs	9.8	--	--	--	9.8
Coopering cases	2.5	--	--	--	2.5
Stacking	2.0	--	--	--	2.0
Loading out	2.1	--	--	--	2.1
Delivering	11.6	--	8.9	--	20.5
Egg breaking	87.3	53.7	--	--	141.0

<sup>1</sup> Represents truck operating expenses of association trucks. Cost of contract trucking not included.

<sup>2</sup> Inspection fees.

<sup>3</sup> Inspection fees and royalties on cartoning equipment.

volume cycles, average receipts for each 2 weeks during the year rather than total receipts during the period studied were used to compute indirect costs per case. By doing this, unit indirect costs were made more comparable among associations than by using receipts that might be high or low in the volume cycle.

Based on the average number of cases received during an average 2-

week period, indirect costs averaged 40.8 cents a case (table 21). These costs varied from 20.4 cents for association A to 60.9 cents for association D.

#### Plant and Non-Plant

Table 21 gives detailed analysis of indirect costs. They are classified first into plant and non-plant costs, then divided into salaries, expenses other than salaries, and depreciation.

TABLE 21.--Indirect costs: Plant, non-plant and total indirect costs per case of eggs received<sup>1</sup>, eight associations, 2-week period, 1956-57

Association	Indirect plant costs				Indirect non-plant costs					Total indirect costs	
	Salaries <sup>2</sup>	Other <sup>3</sup>	Depre- ciation <sup>4</sup>	Total	Manager's salary	Other salaries <sup>5</sup>	Other <sup>6</sup>	Depre- ciation <sup>7</sup>	Total		
<u>Cents per case</u>											
Upper volume group <sup>8</sup>											
A	1.0	2.8	1.0	4.8	2.6	7.0	5.9	0.1	15.6	20.4	
B	6.9	3.8	.8	11.5	2.0	6.7	3.6	.1	12.4	23.9	
C	5.7	4.4	2.2	12.3	4.3	8.3	5.3	.4	18.3	30.6	
D	<u>9.0</u>	<u>5.9</u>	<u>8.6</u>	<u>23.5</u>	<u>5.8</u>	<u>18.1</u>	<u>13.1</u>	<u>.4</u>	<u>37.4</u>	<u>60.9</u>	
Average <sup>9</sup>	<u>5.7</u>	<u>4.2</u>	<u>3.1</u>	<u>13.0</u>	<u>3.7</u>	<u>10.0</u>	<u>7.0</u>	<u>.2</u>	<u>20.9</u>	<u>33.9</u>	
Lower volume group <sup>10</sup>											
F	5.8	.2	1.9	7.9	6.7	9.3	2.7	.1	18.8	26.7	
E	9.8	9.5	3.9	23.2	6.0	13.1	9.4	.4	28.9	52.1	
G	11.0	8.9	7.6	27.5	8.7	12.1	10.1	.1	31.0	58.5	
H	<u>3.9</u>	<u>8.2</u>	<u>10.6</u>	<u>22.7</u>	<u>4.9</u>	<u>13.6</u>	<u>11.6</u>	<u>.8</u>	<u>30.9</u>	<u>53.6</u>	
Average <sup>9</sup>	<u>7.6</u>	<u>6.7</u>	<u>6.0</u>	<u>20.3</u>	<u>6.6</u>	<u>12.0</u>	<u>8.4</u>	<u>.4</u>	<u>27.4</u>	<u>47.7</u>	
Average all associations <sup>9</sup>	<u>6.6</u>	<u>5.4</u>	<u>4.6</u>	<u>16.6</u>	<u>5.2</u>	<u>11.0</u>	<u>7.7</u>	<u>.3</u>	<u>24.2</u>	<u>40.8</u>	
Range:											
Low	1.0	.2	.8	4.8	2.0	6.7	2.7	.1	12.4	20.4	
High	11.0	9.5	10.6	27.5	8.7	18.1	13.1	.8	37.4	60.9	

<sup>1</sup> Annual receipts for 12 months ending with period of study divided by 26.

<sup>2</sup> Includes association wages or salaries for plant supervision, janitor and watchmen, and maintenance and repair labor.

<sup>3</sup> Includes expenses for heat, utilities, general insurance, taxes (real estate and personal property), maintenance and repair, plant supplies, and miscellaneous. Depreciation not included.

<sup>4</sup> Includes depreciation of buildings and plant machinery and equipment.

<sup>5</sup> Includes clerical, fieldmen and salesmen's salaries.

<sup>6</sup> Includes such non-plant expenses as telephone and telegraph, advertising, auditing, directors' expense, annual meetings, and the like. Depreciation not included.

<sup>7</sup> Includes depreciation on office furniture and fixtures.

<sup>8</sup> Average volume received was 15,767 cases.

<sup>9</sup> Unweighted average.

<sup>10</sup> Average of volume received was 3,751 cases.

Such an analysis facilitates the comparison of certain groups of indirect expenses and helps explain variations in costs. These data are shown percentage-wise in table 22. Indirect plant costs averaged 37.6 percent of the total per-unit indirect costs for the upper volume group, 40.9 percent for the lower volume group, and 39.2 percent for the eight associations. Non-plant costs averaged 62.4, 59.1, and 60.8 percent, respectively.

## Costs by Type of Pack

Direct unit costs given thus far in the report have been shown by individual operations. Comparable total

overall costs, both direct and indirect, can be determined by combining costs incurred in the specific types of pack of eggs handled by an association when the labor, materials, truck, and other costs are known.

All associations packed one or more of four packs of eggs: (1) consumer grade, loose, in cases; (2) consumer grade, cartoned cases; (3) wholesale grade, loose, in cases; and (4) liquid, in cans.

Costs by operations for the four packs of eggs by associations and the average of associations concerned appear in tables 23 to 26. Costs for eggs of consumer grade, loose, appear in table 23; consumer grade, cartoned,

TABLE 22.--Indirect costs: Percentage distribution of plant, non-plant and total indirect costs per case of eggs received<sup>1</sup>, eight associations, 2-week period 1956-57

Association	Indirect plant costs				Indirect non-plant costs					Total indirect costs
	Salaries <sup>2</sup>	Other <sup>3</sup>	Depre- ciation <sup>4</sup>	Total	Manager's salary	Other salaries <sup>5</sup>	Other <sup>6</sup>	Depre- ciation <sup>7</sup>	Total	
Percent										
Upper volume group <sup>8</sup>										
A	4.9	13.8	4.8	23.5	12.9	34.0	29.0	.6	76.5	100.0
B	28.9	15.9	3.3	48.1	8.4	28.0	15.1	.4	51.9	100.0
C	18.6	14.4	7.2	40.2	14.1	27.1	17.3	1.3	59.8	100.0
D	<u>14.8</u>	<u>9.7</u>	<u>14.1</u>	<u>38.6</u>	<u>9.5</u>	<u>29.7</u>	<u>21.5</u>	<u>.7</u>	<u>61.4</u>	<u>100.0</u>
Average <sup>9</sup>	<u>16.8</u>	<u>13.5</u>	<u>7.3</u>	<u>37.6</u>	<u>11.2</u>	<u>29.7</u>	<u>20.7</u>	<u>.8</u>	<u>62.4</u>	<u>100.0</u>
Lower volume group <sup>10</sup>										
F	21.7	.8	7.1	29.6	25.1	34.8	10.1	.4	70.4	100.0
E	18.9	18.2	7.4	44.5	11.5	25.2	18.1	.7	55.5	100.0
G	18.8	15.2	13.0	47.0	14.9	20.7	17.2	.2	53.0	100.0
H	<u>7.3</u>	<u>15.3</u>	<u>19.8</u>	<u>42.4</u>	<u>9.1</u>	<u>25.4</u>	<u>21.6</u>	<u>1.5</u>	<u>57.6</u>	<u>100.0</u>
Average <sup>9</sup>	<u>16.7</u>	<u>12.4</u>	<u>11.8</u>	<u>40.9</u>	<u>15.2</u>	<u>26.5</u>	<u>16.7</u>	<u>.7</u>	<u>59.1</u>	<u>100.0</u>
Average all associations <sup>9</sup>	<u>16.7</u>	<u>12.9</u>	<u>9.6</u>	<u>39.2</u>	<u>13.2</u>	<u>28.1</u>	<u>18.7</u>	<u>.8</u>	<u>60.8</u>	<u>100.0</u>
Range:										
Low	4.9	.8	3.3	23.5	8.4	20.7	10.1	.2	51.9	--
High	28.9	18.2	19.8	48.1	25.1	34.8	29.0	1.5	76.5	--

<sup>1</sup> Annual receipts for 12 months ending with period of study divided by 26.

<sup>2</sup> Includes association wages or salaries for plant supervision, janitor and watchmen and maintenance and repair labor.

<sup>3</sup> Includes expenses for heat, utilities, general insurance, taxes (real estate and personal property), maintenance and repair plant supplies, and miscellaneous. Depreciation not included.

<sup>4</sup> Includes depreciation of buildings and plant machinery and equipment.

<sup>5</sup> Includes clerical, fieldmen and salesmen's salaries.

<sup>6</sup> Includes such non-plant expenses as telephone and telegraph, advertising, auditing, directors' expense, annual meetings, and the like. Depreciation not included.

<sup>7</sup> Includes depreciation on office furniture and fixtures.

<sup>8</sup> Average volume received was 15,767 cases.

<sup>9</sup> Unweighted average.

<sup>10</sup> Average of volume received was 3,751 cases.

in table 24; wholesale grade, loose, in table 25; and liquid pack, in table 26. Total costs are shown per case and per dozen.

For purposes of comparison, the average total cost and the number of cooperatives that prepared each pack are as follows:

Type of pack	Number of associations	Average cost per case and dozen <sup>1</sup>	
		Case	Dozen
Consumer grade, loose.....	8	\$2.08	6.9 cents
Consumer grade, cartoned.....	8	2.74	9.1 "
Wholesale grade, loose.....	4	1.61	5.4 "
Liquid.....	1	2.37	7.9 "

<sup>1</sup> The cost to replace eggs not suitable for use in each pack is not included in these costs, but must be considered when these data are used to determine necessary mark-ups.



Eggs candled and sized for the loose pack.

Direct costs are made up of direct labor, packing materials, truck expenses and other direct costs such as rental of candling and cartoning equipment.

To find the total cost of each pack, the indirect costs were added to the direct costs although not allocated to separate egg-handling operations. In the data presented, indirect costs have been allocated proportionally to each type of pack. The allocation could be made by other methods: in the same ratio that total direct labor cost for each pack is of total direct labor cost; in the same ratio as total direct costs for each pack is of total direct

costs; or in the ratio of number of labor hours in each pack to total number of labor hours.

Indirect costs were allocated proportionally to each pack in this study because of simplicity of computation. Allocation by the other methods mentioned above would increase indirect costs some for the consumer grade loose and cartoned packs and decrease them for the wholesale grade loose pack for the associations in this study.

The following tabulation shows the average and range of total costs per dozen by type of pack:

Cost	Type of pack			
	Consumer grade, loose	Consumer grade, cartoned	Wholesale grade, loose	Liquid
<u>Cents per dozen</u>				
Average	6.9	9.1	5.4	7.9
Range:				
Low	<sup>1</sup> 4.8	7.4	<sup>1</sup> 2.4	-
High	8.0	10.1	5.7	-

<sup>1</sup> Does not include collecting and delivering costs.

TABLE 23.--Cost for consumer grade, loose case-packed eggs, by operations and total, eight associations, 2-week period, 1956-57

Costs and operation	Associations								
	A	B	C	D	E	F	G	H	Average <sup>1</sup>
Cents per case									
<u>Direct costs:</u>									
Direct labor:									
Collecting	( <sup>2</sup> )	<sup>3</sup> 16.8	( <sup>2</sup> )	<sup>3</sup> 12.0	20.1	<sup>3</sup> 1.6	13.5	27.3	<sup>3</sup> 15.2
Receiving	2.2	2.6	1.9	1.9	1.3	2.1	2.7	1.7	2.1
Sizing <sup>4</sup>	--	--	--	(7.2)	(30.4)	--	(11.5)	(10.0)	(14.8)
Candling:									
Actual candling	60.6	22.4	40.3	42.9	30.9	46.4	40.3	27.0	38.9
Auxiliary labor	14.8	13.8	27.8	7.4	17.0	2.6	8.7	14.8	13.4
Coopering cases	2.5	3.1	3.2	2.1	2.7	2.0	2.5	1.6	2.5
Stacking	2.1	2.3	1.9	1.4	1.6	1.5	3.4	1.7	2.0
Loading out	<sup>5</sup> 1.5	2.0	2.8	4.1	2.5	1.0	1.9	1.0	2.1
Delivering eggs	( <sup>2</sup> )	<sup>6</sup> 8.3	( <sup>2</sup> )	<sup>3</sup> 10.5	11.6	4.8	22.9	9.9	11.3
Total direct labor	83.7	71.3	77.9	82.3	87.7	62.0	95.9	85.0	87.5
Packing materials	44.4	41.3	45.6	57.7	44.2	7.2	35.1	44.3	40.0
Truck expense: <sup>7</sup>									
Collecting	--	<sup>8</sup> 24.3	<sup>9</sup> 28.8	<sup>8</sup> 18.7	16.4	<sup>8</sup> 42.9	9.7	24.8	23.9
Delivering	--	<sup>8</sup> 20.8	--	<sup>8</sup> 20.3	10.4	5.4	3.7	14.6	12.5
Other	.2	15.2	.7	--	.6	2.5	.8	1.0	3.0
Total direct cost	128.3	172.9	153.0	179.0	159.3	120.0	145.2	169.7	166.9
<u>Indirect costs:</u>									
Plant	4.8	11.5	12.3	23.5	23.2	7.9	27.5	22.7	16.6
Non-plant	15.6	12.4	18.3	37.4	28.9	18.8	31.0	30.9	24.2
Total indirect cost	20.4	23.9	30.6	60.9	52.1	26.7	58.5	53.6	40.8
<u>Total cost:</u>									
Per case	<sup>10</sup> 148.7	196.8	<sup>11</sup> 183.6	239.9	211.4	146.7	203.7	223.3	207.7
Per dozen	<sup>10</sup> 5.0	6.6	<sup>11</sup> 6.1	8.0	7.0	4.9	6.8	7.4	6.9

<sup>1</sup> Unweighted average of associations performing operation.

<sup>2</sup> Contract trucks.

<sup>3</sup> Direct labor cost divided by total volume collected or delivered.

<sup>4</sup> Sizing cost figures are included in candling labor cost but are not duplicated in total cost.

<sup>5</sup> Eggs are not loaded into trucks by association employees.

<sup>6</sup> Weighted average of association and contract truck laborers.

<sup>7</sup> Collecting and delivering costs, including labor, should be charged only to the actual number of cases collected or delivered.

<sup>8</sup> Weighted average cost of association truck expense and cost of contract truck hauling. See tables 5 and 16 for actual collecting and delivering costs by contract truckers.

<sup>9</sup> Cost of contract truck hauling.

<sup>10</sup> Does not include collecting and delivering costs.

<sup>11</sup> Does not include delivering costs.

TABLE 24.--Total cost for consumer grade, cartoned case-packed eggs, eight associations, 2-week period 1956-57

Costs and operation	Associations								
	A	B	C	D	E	F	G	H	Average <sup>1</sup>
<u>Cents per case</u>									
<u>Direct costs:</u>									
<u>Direct labor:</u>									
Collecting	( <sup>2</sup> )	<sup>3</sup> 16.8	( <sup>2</sup> )	<sup>3</sup> 12.0	20.1	<sup>3</sup> 1.6	13.5	27.3	15.2
Receiving	2.2	2.6	1.9	1.9	1.3	2.1	2.7	1.7	2.1
Sizing <sup>4</sup>	--	--	--	(7.2)	(30.4)	--	(11.5)	(10.0)	(14.8)
<u>Cartoning:</u>									
Actual candling	60.3	22.5	38.3	43.1	29.8	46.3	40.3	27.0	38.6
Auxiliary labor	12.1	28.4	8.6	13.1	16.3	4.0	13.2	13.3	13.4
Packing cartoned eggs	11.7	11.8	7.3	12.3	10.3	4.5	6.3	13.9	9.8
Coopering cases	2.5	3.1	3.2	2.1	2.7	2.0	2.5	1.6	2.5
Stacking	2.1	2.3	1.9	1.4	1.6	1.5	3.4	1.7	2.0
Loading out	<sup>5</sup> 1.5	2.0	2.8	4.1	2.5	1.0	1.9	1.0	2.1
Delivering eggs	( <sup>2</sup> )	<sup>6</sup> 8.3	( <sup>2</sup> )	<sup>3</sup> 10.5	11.6	4.8	22.9	9.9	11.3
Total direct labor	<u>92.4</u>	<u>97.8</u>	<u>64.0</u>	<u>100.5</u>	<u>96.2</u>	<u>67.8</u>	<u>106.7</u>	<u>97.4</u>	<u>97.0</u>
Packing materials	109.8	99.2	98.6	104.0	89.7	81.5	94.5	94.4	96.5
Truck expense: <sup>7</sup>									
Collecting	--	<sup>8</sup> 24.3	<sup>9</sup> 28.8	<sup>8</sup> 18.7	16.4	<sup>8</sup> 44.5	9.7	24.8	23.9
Delivering	32.1	<sup>8</sup> 20.8	--	<sup>8</sup> 20.3	10.4	5.4	3.7	14.6	12.5
Other	<u>1.7</u>	<u>15.2</u>	<u>1.4</u>	<u>.8</u>	<u>2.1</u>	<u>3.1</u>	<u>1.7</u>	<u>3.7</u>	<u>3.7</u>
Total direct cost	<u>236.0</u>	<u>257.3</u>	<u>192.8</u>	<u>244.3</u>	<u>214.8</u>	<u>202.3</u>	<u>216.3</u>	<u>234.9</u>	<u>233.6</u>
<u>Indirect costs:</u>									
Plant	4.8	11.5	12.8	23.5	23.2	7.9	27.5	22.7	16.6
Non-plant	<u>15.6</u>	<u>12.4</u>	<u>18.3</u>	<u>37.4</u>	<u>28.9</u>	<u>18.8</u>	<u>31.0</u>	<u>30.9</u>	<u>24.2</u>
Total indirect costs	<u>20.4</u>	<u>23.9</u>	<u>31.1</u>	<u>60.9</u>	<u>52.1</u>	<u>26.7</u>	<u>58.5</u>	<u>53.6</u>	<u>40.8</u>
<u>Total cost:</u>									
Per case	<sup>10</sup> 256.4	281.2	<sup>11</sup> 223.9	305.2	266.9	229.0	274.8	288.5	274.4
Per dozen	<sup>10</sup> 8.6	9.4	<sup>11</sup> 7.4	10.1	8.9	7.6	9.2	9.6	9.1

<sup>1</sup> Unweighted average.<sup>2</sup> Contract trucks.<sup>3</sup> Direct labor cost divided by total volume collected or delivered.<sup>4</sup> Sizing cost figures are included in cartoning labor cost but are not duplicated in total costs.<sup>5</sup> Eggs are not loaded into trucks by association employees.<sup>6</sup> Weighted average of associations and contract truck laborers.<sup>7</sup> Collecting and delivering costs, including labor, should be charged only to the actual number of cases collected or delivered.<sup>8</sup> Weighted average cost of association truck expense and cost of contract truck hauling. See tables 5 and 16 for actual collecting and delivering costs by contract truckers.<sup>9</sup> Cost of contract truck hauling.<sup>10</sup> Does not include collecting costs.<sup>11</sup> Does not include delivering costs.

TABLE 25.--Total cost of wholesale grade, loose case-packed eggs, eight associations, 2-week period, 1956-57

Costs and operation	Wholesale grade loose				
	Associations				
	A	B	C	E	Average <sup>1</sup>
<u>Cents per case</u>					
<u>Direct costs:</u>					
Direct labor:					
Collecting	( <sup>2</sup> )	<sup>3</sup> 16.8	( <sup>2</sup> )	20.1	<sup>3</sup> 18.5
Receiving	2.2	2.6	1.9	1.3	2.0
Inspecting	3.2	10.5	7.4	9.4	7.6
Coopering	2.5	3.1	3.2	2.7	2.9
Stacking	2.1	2.3	1.9	1.6	2.0
Loading out	<sup>4</sup> 1.5	2.0	2.8	2.5	2.2
Delivering	( <sup>2</sup> )	<sup>5</sup> 8.3	( <sup>4</sup> )	11.6	9.9
Total direct labor	11.5	45.6	17.2	49.2	45.1
Packing materials	39.1	50.0	45.9	44.2	44.8
Truck expense: <sup>6</sup>					
Collecting	--	<sup>7</sup> 24.3	<sup>8</sup> 28.8	16.4	23.2
Delivering	--	<sup>7</sup> 20.8	--	10.4	15.6
Other	( <sup>9</sup> )	.2	( <sup>10</sup> )	--	.2
Total direct cost	50.6	140.9	91.9	120.2	128.9
<u>Indirect costs:</u>					
Plant	4.8	11.5	12.3	23.2	13.0
Non-plant	15.6	12.4	18.3	28.9	18.8
Total indirect cost	20.4	23.9	30.6	52.1	31.8
<u>Total cost:</u>					
Per case	<sup>11</sup> 71.0	164.8	<sup>12</sup> 122.5	172.3	160.7
Per dozen	<sup>11</sup> 2.4	5.5	<sup>12</sup> 4.1	5.7	5.4

<sup>1</sup> Unweighted average.

<sup>2</sup> Contract trucks.

<sup>3</sup> Direct labor cost divided by total volume collected.

<sup>4</sup> Eggs not loaded into trucks by association employees.

<sup>5</sup> Weighted average of association and contract truck laborers.

<sup>6</sup> Collecting and delivering costs, including labor, should be charged only to the actual number of cases collected or delivered.

<sup>7</sup> Weighted average cost of association truck expense and cost of contract truck hauling. See tables 6 and 17 for actual collecting and delivering costs by contract truckers.

<sup>8</sup> Cost of contract truck hauling.

<sup>9</sup> Less than 0.1 cent.

<sup>10</sup> Less than 0.05 cent.

<sup>11</sup> Does not include collecting and delivering costs.

<sup>12</sup> Does not include delivering cost.

TABLE 26.--Total cost of liquid pack of eggs, one association,  
2-week period, 1956-57

Cost and operation	Cost per case	Cost and operation	Cost per case
	<u>Cents</u>		<u>Cents</u>
Direct costs:		Indirect costs	
Direct labor: <sup>1</sup>		Plant	23.5
Collecting	<sup>2</sup> 12.0	Non-plant	<u>37.4</u>
Receiving	1.9		
Egg breaking	87.3	Total indirect costs	<u>60.9</u>
Coopering cases	2.1		
Total direct labor	<u>103.3</u>	Total cost	
		Per case	236.6
Packing materials	53.7	Per dozen	7.9
Truck expense: <sup>1</sup>			
Collecting	<sup>3</sup> 18.7		
Total direct cost	<u>175.7</u>		

<sup>1</sup> No attempt made to determine labor costs chargeable to the liquid egg pack for candling, stacking, loading out, delivering, or for delivery truck operating expense.

<sup>2</sup> Direct labor cost divided by total volume collected.

<sup>3</sup> Weighted average cost of association truck expense and cost of contract hauling. See table 5 for actual cost of collecting by contract truckers.



